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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/863,399 | 05/24/2001 | Sung Woong Moon | 8733.440.00 | 9194 |

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MCKENNA LONG & ALDRIDGE LLP
1900 K STREET, NW
WASHINGTON, DC 20006

EXAMINER

DI GRAZIO, JEANNE A

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| ART UNIT | PAPER NUMBER |
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2871

DATE MAILED: 05/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/863,399

Applicant(s)

MOON ET AL.

Examiner

Jeanne A. Di Grazio

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☒ Claim(s) 18-26 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Priority

Priority to Korean Patent Application No. 2000-28072 of May 24, 2000 is claimed.

This Office Action Replaces the Office Action of Nov. 15, 2002 and is in response to Amendment of February 13, 2003.

Claim Objections

Claims 18-26 are objected to because of the following informalities: Claims 18-26 depend on claim 16 when they should depend on claim 17. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 6, 7, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoon (US '562). Applicant's effective date: May 24, 2000. Yoon issued: Oct. 6, 1998.

Per claims 1 and 12: A tape carrier package (it is implied that, inherent that, a base film is a part of the tape carrier package) that is bonded onto a liquid crystal display panel, comprising a plurality of pads bonded to pads of the liquid crystal display panel and divided into at least two parts. Please see Figures 4A and 4B which clearly illustrate a TCP bonded onto a liquid crystal

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display panel and the TCP and LCD have numerous pads and divided into at least two parts.

There is a spacing or slit between the pads.

Per claim 2: Figures 4A and 4B show pad parts with a desired width or slit therebetween.

Per claim 6: a PCB mounted with driving circuits generating driving signals for driving the liquid crystal display panel (Col. 2, Line 16), wherein an output pad of the tape carrier package is bonded in a plane state between the liquid crystal display panel and the printed circuit board (See Figures 4A and 4B).

Per claim 7: a pad part being provided with a plurality of pads bonded to pads of the liquid crystal display panel and divided into at least two parts and a substrate with pads of a driving wire to which pads of the tape carrier package is bonded and the tape carrier package is bonded onto the substrate (Figures 4A and 4B and Col. 1, Lines 60-67 and Col. 2, Lines 1-7).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (US '562) as applied to claims 1, 2, 6, and 7 above and in view of Shinji (JP-09-127542).

Per claims 3 and 4: Yoon does not appear to have a slit mounted with an IC and formed by removing one side of a base film provided with the pad part; however, Shinji has a TCP and base film where the TCP is mounted with an IC and there is a slit (PAJ Ref. Item 5). It would have been obvious to one of ordinary skill in the art at the time the invention was made to

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modify Yoon in view of Shinji to inspect a potentially defective liquid crystal display element (PAJ). The slit may be positioned at the center of the base film if so desired to facilitate testing.

Per claim 8: As noted with regard to claim 2, the pad part may be divided with a desired slit or width therebetween for the purposes of testing and inspection.

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (US '562) as applied to claims 1-4 above and in view of Funahata et al. (US 539).

Per claim 5: Yoon does not appear to have a TCP bonded in a bent state; however, Funahata a bent TCP (Col. 1, Lines 58-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoon in view of Funahata for a high reliability and high yield bent TCP (Col. 1, Id.).

Per claim 10: Yoon does not appear to have a backlight; however, Funahata does have a backlight (Col. 1, Line 66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoon in view of Funahata to include a backlight to illuminate an LCD panel.

Claims 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (US '562) as applied to claims 1-8 above and in view of Kwon et al. (US '019 B1).

Per claim 9: Yoon does not appear to specify a PCB to which an input pad of the TCP is connected; however, Kwon has a TCP connected to a PCB (Col. 3, Lines 44-49). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoon in view of Kwon for driving an LCD.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al. (US 2001/0035930 A1).

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Per claim 11: Yun does not appear to disclose the method recited by Applicant; however, Yun does have the apparatus. Specifically, Yun has a pad part of a TCP divided into at least two parts and a TCP with the divided pad parts bonded to the LCD panel [0034, 0035, and 0036; Figure 9]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yun for the method steps corresponding to the apparatus for a simple manufacturing process that allows for reduced thermal expansion of the TCP and subsequent reduced stress applied to the glass substrate [0035].

Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoon (US 562) as applied to claim 12 above and in view of Cho (US 768 B1).

Per claims 13-16: Yoon does not appear to have the elements of claims 13-16; however, Cho has a flexible polyimide base film (Col. 2, Line 17), an input pad on the base film (Col. 1, Lines 65-67), and an IC on the base film (Col. 1, Lines 65-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yoon in view of Cho for a common mounting structure of a TCP in a TAB system that has a rather simple mounting process (Col. 1, "Background of the Invention", Lines 62-64).

Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al. (US 2001/0035930 A1).

Per claim 17: Yun has a PCB with an output signal wiring, a substrate with a plurality of conductive lines, a TCP including a base film, and an input pad electrically connected to the output signal wiring of the PCB and each of the plurality of output pads connected to conductive lines [0008]. In another embodiment, Yun has a slit between two pads [0008] Bending parts (slits) are provided between the output pad and IC [ID.]. It would have been obvious to one of

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ordinary skill in the art at the time the invention was made to include a slit between pads for ease in testing and inspecting and to allow for thermal expansion of the TCP.

Per claims 18 and 19: Yun has a bent and substantially straight TCP [0008]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a bent and or straight TCP depending on the use – bent TCP for mounting source and gate drivers for a monitor or notebook computer and straight for mounting gate drivers of a small size notebook computer or monitor [0009].

Per claim 20: Yun has a glass substrate [0034]. Glass substrates are commonly used in the art of substrate manufacturing and LCD devices.

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al. (US 2001/0035930 A1) as applied to claims 17-20 above and in view of Cho (US '768 B1).

Per claims 21-23: Yun does not appear to have the elements of claims 21-23; however, Cho has a flexible polyimide base film (Col. 2, Line 17), an input pad on the base film (Col. 1, Lines 65-67), and an IC on the base film (Col. 1, Lines 65-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yun in view of Cho for a common mounting structure of a TCP in a TAB system that has a rather simple mounting process (Col. 1, "Background of the Invention", Lines 62-64).

Claims 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al. (US 2001/0035930 A1) as applied to claims 17-23 above and in view of Kwon et al. (US '019 B1).

Per claims 24 and 25: Yun has anisotropic conductive film used for various connections (Col. 1, Lines 47-67 and Col. 2, Lines 1-2). It would have been obvious to one of ordinary skill

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in the art at the time the invention was made to use anisotropic conductive film for various connections because ACFs are commonly used in the manufacture of LCD modules (Col. 1, Lines 47-49 for example).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yun et al. (US 2001/0035930 A1) as applied to claims 17-25 above and in view of Funahata et al. (US '539).

Per claim 26: Yun does not appear to have a backlight; however, Funahata has a backlight (Col. 1, Line 66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Yun in view of Funahata to include a backlight to illuminate an LCD panel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG
May 2, 2003


TOANTON
PRIMARY EXAMINER